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(54) **METHOD FOR DETERMINING VEHICLE WHEEL SPEED AND SLIP CONDITION PARAMETERS**

(71) Applicant: **e-AAM Driveline Systems AB**, Trollhättan (SE)

(72) Inventors: **Yunlong Gao**, Trollhättan (SE); **Matthijs Klomp**, Trollhättan (SE)

(73) Assignee: **e-AAM Driveline Systems AB**, Trollhättan (SE)

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(58) **Field of Classification Search**
USPC 701/90; 180/247
See application file for complete search history.

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Primary Examiner — Tyler Paige
(74) *Attorney, Agent, or Firm* — Harness, Dickey & Pierce, P.L.C.

(57) **ABSTRACT**

A method is described for estimating longitudinal velocity of a vehicle on a road surface. The method includes obtaining a measured value of vehicle acceleration, which is dependent on longitudinal acceleration of the vehicle and vertical acceleration of the vehicle when a slope of the road surface is non-zero. The method includes determining an initial estimate of the slope. The method includes determining a difference between the initial estimate of the slope and a prior estimate of the slope and, based on the difference, setting a current estimate of the slope to be equal to the initial estimate or the prior estimate. The method includes estimating the longitudinal velocity of the vehicle based on the current estimate of the slope and the measured value of vehicle acceleration. The method includes controlling at least one wheel of the plurality of wheels based on the estimated longitudinal velocity of the vehicle.

4 Claims, 7 Drawing Sheets